

sandstone, about ten inches thick, chamfered on the edges, and bonded in courses into the wall. At about 4 feet above the floor, the jambs are corbelled out in two courses, and from these corbels the arched mantle springs. Where the jambs project from the wall, the corbels, in order to give it strength, are returned anglewise into the wall, as the sketch below may explain.



The entrance from the outer to the inner court is flanked by a loop-holed bartizan, and is secured by a double-barred door.

On the south side of the inner court is a building of two storeys; the upper story is one apartment 22 feet by 22 feet, lighted by two square-headed windows, with tracery. The roof has been supported by a stone-arched rib, similar to those in the hall. From this there is a communication with other buildings on the south and east of the court, forming, with the two eastern towers called "Tury Brenhin," or the King's Tower, and "Tury Ferenhine," or the Queen's Tower, a commodious suite of apartments. These towers are three storeys in height, besides the cellars. The eastern end of the castle abuts upon an esplanade or terrace, about 90 feet by 50 feet, raised about 40 feet above the bank of the river, and protected by three towers and an embattled wall. In this front, the windows being comparatively out of danger, are much larger than elsewhere. In the Queen's Tower there is formed in the thickness of the wall a beautiful little chapel, with a groined roof, lighted by three single-light lancet windows, with surbase arches and sedilia round. The manner in which the lights in the multangular sides of the chapel are managed as to harmonize with the circular form of the tower outside, is ingenious and worthy of notice.

The towers abutting on the outer court are much alike in their general arrangement. The basement story has been used either as a prison or a deposit for stores, the fastenings having been on the outside. The upper storeys have been occupied as dwelling apartments, having each windows and huge fireplaces. Each tower has a commodious spiral staircase. On each landing there is a passage pierced in the thickness of the wall, leading to a water-closet, of what would now be termed such, the funnels of which discharge outside the castle walls, near the bottom. The numerous provision of these necessary conveniences is rather remarkable for the age. Even on the walls of the town there are several remains of similar structures, evidently part of the original construction of the masonry. From each staircase there is access to the battlements of the walls, which form a commodious promenade round the entire building, being carried round the inner projection of the towers on corbels. The roofs of the hall and other buildings have been on the same level with the battlements, and being flat and covered with lead, would form very useful platforms in cases of emergency.

The towers are carried up about fifteen feet above the curtain walls, finished, like the walls, with a parapet, loop-holes, and embrasures. The four towers at the angles of the inner court have the inclosure of the staircases carried up about fifteen feet higher, forming turrets or watch towers, crowned with a plain parapet and coping, supported on projecting corbels forming blank machicolations.

With the exception of the suite of apartments in the inner court, the towers and the hall are quite detached, having no communication with each other except from the court or the summit of the walls. The curtain walls are about 11 feet thick, pierced at intervals with arched recesses, with lancets round and loop holes for archery. The walls of the towers and the hall are about 12 feet in thickness.

The principal material used in the construction is the slaty rock on which the castle stands. Limestone is also introduced to some extent. The walls are rubble, but beautifully executed, the face being as smooth and true as any ashlar wall could be, the larger stones well fitted to-

gether by smaller ones, the joints remarkably close, and the stones all laid on their natural quarry beds. The curved line of the circular work is worked very true. Many of the corbels, some of the arches, and the whole of the tracery, have been executed in siliceous sandstone, which must have been brought from a considerable distance, as there is none in the neighbourhood. Some of the corbels are of heavy limestone. Much of the sandstone is honey-combed where exposed to the weather, though in other parts the stones still preserve their masons' marks. The mortar is of very good quality, though not so hard as might have been expected. In the interior of the walls it seems to have been applied in the form of grout, or rather of thin concrete, by the quantity of gravel with which it is mixed.

The strength of the work has been put to a severe test, by some injudicious excavations which have been permitted on the south side. One of the towers having been undermined, the lower portion has fallen away, leaving an awful chasm, whilst the upper portion still remains apparently suspended in mid air.

With the exception of the covering of the roofs, the floors, and the doors, no timber whatever has been used in the construction. The apertures are in general arched over, but with the exception of the little chapel mentioned above, no vaulting or groining is observable through the whole edifice.

In surveying the building generally, we cannot help feeling struck with the evidences of studied preparation and careful superintendence which the work every where exhibits. Every architect knows or should know, that when the details of a building—not merely the exterior but all the internal fittings—have to be carried out in masonry and built in as the work proceeds, not lined up afterwards in the manner of plaster and joiner's work, the utmost precision and the most careful forethought are required. In the present instance, the details exhibit a care and accuracy worthy of all imitation.

The walls of the hall and the inner buildings generally, are not tied into the walls of the *enceinte* which appear to have been first completed, and the inner buildings carried up afterwards.

Mention is made in the guide-books of a sally-port and a subterranean way cut through the rock and opening on the brink of the river. If such a passage ever existed, all traces of it have disappeared. There is a sunk area in the outer court, about 15 feet square, walled round and partly filled with rubbish; it has probably been a water conduit.

The plan of the town walls forms a triangle, with a small part of the apex cut off. The circuit is about two miles. The walls are of the same period, and constructed much in the same manner as the walls of the castle. Far different from the walls encircling the ancient city of Chester, the only other complete mural circuit remaining, which are a patchwork medley of all ages and constructions, the walls of Conway are uniform in their construction and design. Reparations have doubtless taken place, but in perfect accordance with the original plan. They are 6 feet to 7 feet thick, and from 15 feet to 20 feet in height, crowned with a parapet, with embrasures and loopholes. In some places where the wall is particularly exposed, the upper part is machicolated. The wall is defended by semi-circular buttress towers, about 15 feet in diameter, rising about 12 feet above the top of the wall, placed at intervals of about 30 yards. The various flights of steps for obtaining access to the walls and the pathway along the top are still perfect. The walls rise and fall with the inequalities of the surface, which are considerable; but in all cases the courses of wall-stones are set level, and are cut to the slope at the bottom of the parapet, where thin courses on the slope are introduced to form the platform.

The original entrances to the town are three in number. Port Uebaf, or the upper gate; Porth Isaf, or the lower gate; and Porth Velin, or the mill gate. To the left of the gate the wall exhibits the machicolations above alluded to. In addition to the three principal gates, there are two or three posterns. On the side next the harbour the wall is continued along the bank of the river, and at the two extremities a curtain wall is carried out, terminated by a tower at the water's edge.

The town, internally, contains few objects of interest. There are a few half-timbered houses, and a rather large edifice of the Elizabethan period, now sub-divided into cottages, but presenting no remarkable features. The church occupies part of the site of an ancient Cistercian monastery, but in itself contains nothing peculiar. The little church of Cyffin, about half a mile outside the walls, contains some curious distemper paintings on the walls and ceiling, but in a sad state of mould and dilapidation.

The suspension-bridge over the Conway, and the new road constructed by Telford and completed in 1826, have greatly improved the facilities for travel in this direction. Of the engineering part of the work we will not speak, but in regard to the harmonious connection of the new work with the old, and the preservation of the venerable association with other times intact, too much cannot be said in its praise.

The piers and masonry of the bridge group admirably with the hoary towers of the castle, and when, sweeping round the base of the castle rock, we demand admission into the town, a grated portcullis (or a gate resembling one) under an arch flanked by an "ivy-mantled tower" opens for our admission. At the other side of the town, also, it was necessary to open a new entrance for the improved road. This has been effected under one of the buttress towers without removing the upper part of the masonry, and the arch inserted, though semi-circular in form, in detail, works in well with the old portion.

We should be extremely glad to bestow the same need of praise on the railway works now in progress, but truth and candour will not admit of it. The piers of the intended tubular bridge were not sufficiently advanced to enable us to judge of their design, but if they are the work of the same artist who has designed the other structures connected with the railway hereabouts, we should not be very sanguine as to the result. The railway passes on an embankment over the road to Llanrwst, immediately outside the wall of the town. The bridge or viaduct is a very flat four-centred arch with square soffit, and faced with channelled rustics.

A little further on, the railway pierces the wall, and enters the town under a yawning misshapen four-centred arch of most barbarous detail. The architecture is, in fact, of that delectable description known by the soubriquet of Batty Langley, or cabinet-maker's Gothic. Surely it is not necessary in the construction of a railway that taste and consistency in design should be outraged or despised.

In the erection of stations, architects have sometimes been employed, and many of our railway stations present pleasing compositions. Why should not a little of the same assistance be sought for in the designs for the engineering portions of the work? Until the architect be associated with his brother professor in extensive works of this description, we fear that notwithstanding all the efforts now in progress to diffuse the principles of correct taste amongst the community at large, they will be entirely counteracted by the equally rapid diffusion of tasteless and unsightly, though imposing and expensive objects. J. A. P.

THE IRON FRANK IN FRANCE.—The *Moniteur* contains the following data on the produce and manufacture of iron in France:—"There is not," it says, "a branch of industry occupying more labourers than that of iron. The number engaged in the mines and works are estimated at 51,000. The other individuals employed in carrying the metal, and in various external works, being as numerous, the iron industry affords labour to at least 100,000 men. The produce in 1845 exceeded 166,000,000 francs. To that human force must be added 2,047 hydraulic-engines, and 207 steam-engines, representing together a power equal to that of 26,504 horses. The number of steam-engines was only 109 in 1840, so that it nearly doubled in five years."

THE TOMB OF A SCIPIO.—We read in the *Impartial of Franche-Comté*, that in digging for the foundation of the Arsenal there, many remains of Roman construction have been found, and of a vast cemetery. A portion of one sepulchral monument bears this inscription, "P. Cornelius Scipio," and has set the local antiquaries to work.